Executive information site management system for monitoring project performance: system requirement study

Abstract :

Progress monitoring and control is one of the most important tasks of managing projects. Basically, construction works produce a lot of information that are required by top managements to track the work progress at site. A recent issue highlighted by top managements is the inefficiency in obtaining information from project sites on time. Hence, the focus of this research is to establish a computerized information system that can be utilized by top managements in order to evaluate the construction progress, known as Executive Information Site Monitoring System (EISMS). In order to develop EISMS, a Classic Waterfall Model has been considered as a basis for the system development whereby it began with identifying the system requirement followed by the system design (product design and detail design), coding, integration and finally the system testing and implementation. As relevancy to research field, this paper focuses on the development of system requirement. The research is presented in two study phases. In the first phase, initially it was conducted a descriptive survey study on "important futures", followed by a descriptive study also on managerial priorities in Key Performance Indicators (KPI) of EISMS. The survey results "work progress" as the most "important features" for the system. Furthermore, the survey addresses managerial priorities on KPI to be emphasized in EISMS. As the study shows, development of the system requires three primary databases which include planned work schedule, 3D-CAD drawing, and actual work completion at site. In second phase, it is to elaborate propose EISMS framework model. Furthermore, it designed in a novel monitoring and control algorithm to track the "work progress". Initially, it was to compute planned and actual work progress and thus the schedule variance at any selected specific date. Within this study, a trial based version of EISMS schedule variance analysis was implemented during the construction phase of one case study to investigate any shortcoming of a developed system in calculating schedule variance of project.